



#5 D.J. 66-0681
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: W.D. Grover et al. Attorney Docket No.: LAMA118219
Application No.: 10/016,272 Group Art Unit: 2681
Filed: November 2, 2001
Title: TOPOLOGICAL DESIGN OF SURVIVABLE MESH-BASED TRANSPORT NETWORKS

INFORMATION DISCLOSURE STATEMENT

Seattle, Washington 98101 **RECEIVED**
May 4, 2004 MAY 07 2004

TO THE COMMISSIONER FOR PATENTS: Technology Center 2600

Applicants are aware of the information listed in the attached form that may be material to the prosecution of the above-identified patent application.

- 1. X Copies of the listed patents, publications, and other information are enclosed for the Examiner's use.
- 2. X Pursuant to 37 C.F.R. § 1.97(b), this Information Disclosure Statement is being filed within three months of the filing date of the national application (other than a CPA), within three months of the date of entry of the national stage as set forth in 37 C.F.R. § 1.491 in an international application, before the mailing date of a first Office Action on the merits, or before the mailing date of a first Office Action after the filing of an RCE.

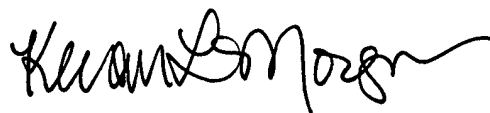
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3. X The Commissioner is hereby authorized to charge any fees under 37 C.F.R. §§ 1.16, 1.17 and 1.18 which may be required during the entire pendency of the application, or credit any overpayment, to Deposit Account No. 03-1740. This authorization also hereby includes a request for any extensions of time of the appropriate length required upon the filing of any reply during the entire prosecution of this application.

Respectfully submitted,

CHRISTENSEN O'CONNOR
JOHNSON KINDNESS^{PLLC}



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I hereby certify that this correspondence is being deposited with the U.S. Postal Service in a sealed envelope as first class mail with postage thereon fully prepaid and addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the below date.

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Examiner: Unknown
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United States Patent Documents

Examiner Initial	ID	Document Number	Date	Name	Class	Sub Class
___	A1	5,850,505	12/15/98	Grover et al.	395	182.02
___	A2	6,377,543 B1	04/23/02	Grover et al.	370	227
___	A3	6,052,796	04/18/00	Croslin	714	4
___	A4	6,421,349 B1 (Corresponds to C3 listed below)	07/16/02	Grover	370	408
___	A5	6,404,734 (Corresponds to C5 listed below)	06/11/02	Stamatelakis	370	227
___	A6	2002/0071392 (Corresponds to C11 listed below)	06/13/2002	Grover et al.	370	241
___	A7	6,154,296	11/28/2000	Elahmadi et al.	259	119

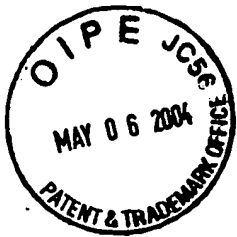
Other Information

(Include author, title, date of publication to extent known, relevant pages, and place of publication if known)

Examiner

Initial	ID	Document Identification
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___	C1	A photocopy of Canadian Patent Application No. 2,161,847, filed October 31, 1995 (published May 1, 1997), including drawings and filing certificate, 32 pages.
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—	C2	A photocopy of Canadian Patent Application No. 2,212,933, filed August 13, 1997 (published February 13, 1999), including drawings and filing certificate, 154 pages.
—	C3	A photocopy of Canadian Patent Application No. 2,210,207, filed July 11, 1997 (published January 11, 1999), including drawings and filing certificate, 93 pages. (Corresponds to A4 listed above.)
—	C4	A photocopy of Canadian Patent Application No. 2,269,649, filed April 22, 1999 (published October 22, 2000), including drawings and filing certificate, 21 pages. (Corresponds to C8 listed below.)
—	C5	A photocopy of Canadian Patent Application No. 2,280,981, filed August 27, 1999 (published April 6, 2000), including drawings and filing certificate, 22 pages. (Corresponds to A5 listed above.)
—	C6	A photocopy of Canadian Patent Application No. 2,285,101, filed October 6, 1999 (published April 8, 2000), including drawings and filing certificate, 38 pages. (Corresponds to C9 listed below.)
—	C7	A photocopy of Canadian Patent Application No. 2,307,520, filed April 28, 2000 (published October 29, 2000), including drawings and filing certificate, 131 pages. (Corresponds to C10 listed below.)
—	C8	A photocopy of U.S. Patent Application No. 09/314,518, filed May 19, 1999, including drawings and filing certificate, 21 pages. (Corresponds to C4 listed above.)
—	C9	A photocopy of U.S. Patent Application No. 09/414,474, filed October 7, 1999, including drawings and filing certificate, 38 pages. (Corresponds to C6 listed above.)
—	C10	A photocopy of U.S. Patent Application No. 09/561,355, filed April 28, 2000, including drawings and filing certificate, 125 pages. (Corresponds to C7 listed above.)



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_____	C11	A photocopy of Canadian Patent Application No. 2,359,168, filed October 16, 2001, including drawings and filing certificate, 51 pages. (Corresponds to A6 listed above.)
_____	C12	"Protection Cycles in Mesh WDM Networks", Ellinas, G, Hailemariam, A. G., Stern, T. E.; <i>IEEE Journal on Selected Areas in Communications</i> , Vol. 18, No. 10, October 2000.
_____	C13	"MENTOR: an algorithm for mesh network topological optimization and routing", G. Grover, A. Kershenbaum, P. Kermani, <i>IEEE Transaction on Communications</i> , Vol. 39, p. 503-513, 1991.
_____	C14	"Algorithms for the Spare Capacity Design of Mesh Resorable Networks", B. D. Venables, M.Sc. Thesis, University of Alberta, Edmonton, 1992.
_____	C15	"Optimal capacity placement for path restoration in STM and ATM mesh-survivable networks", R. R. Iraschko, M. H. MacGregor, W. D. Grover, <i>IEEE/ACM Transactions on Networking</i> , Vol. 6, No. 3, pp. 325-336, June 1998.
_____	C16	"Near optimal spare capacity planning in a mesh restorable network", W. D. Grover, T. D. Bilodeau, B. D. Venables, <i>IEEE Globecom '91</i> , pp. 2007-2012, 1991.
_____	C17	"A fast heuristic principle for spare capacity placement in mesh-restorable SONET/SDH transport networks", <i>Electronics Letters</i> , Vol. 33, No. 3, pp. 195-196, Jan. 30, 1997.
_____	C18	"Two strategies for spare capacity placement in mesh restorable networks", B. D. Venables, W. Grover, M. H. MacGregor, <i>Proceedings of the IEEE ICC '93</i> , Geneva, pp. 267-271, May 1993.
_____	C19	"Comparative methods and issues in design of mesh-restorable STM and ATM networks", W.D. Grover, R.R. Iraschko, Y. Zheng, <i>Telecommunication Network Planning</i> , pp. 169-200, editors: B. Sanso and P. Soriano, Kluwer Academic Publishers, 1999.



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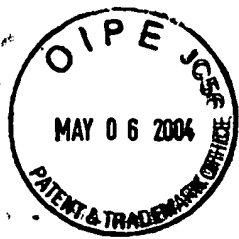
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_____	C20	"A self-healing network with an economical spare-channel assignment", H. Sakauchi, Y. Nishimura, S. Hasegawa, <i>Proc. IEEE Globecom</i> , (1990) pp 438-443.
_____	C21	"An optimal spare-capacity assignment model for survivable networks with hop limits," M. Herzberg, and S. Bye, <i>Proc. IEEE GLOBECOM '94</i> , pp. 1601-1607, 1994.
_____	C22	"Distributed self-healing network and its optimum spare capacity assignment algorithm", Chujo, T., Komine, H., Miyazaki, K., Ogura, T., Soejima, T., , <i>Electronics and Commun. in Japan</i> , part 1, vol. 74, no. 7, 1991, pp. 1-8.
_____	C23	"A unified approach to network survivability for teletraffic networks: models, algorithms and analysis", D. Medhi, <i>IEEE Trans. on Communications</i> , vol.42, 1994, pp.534-548.
_____	C24	T. Cinkler, T. Henk, G. Gordos, "Stochastic algorithms for thrifty single-failure-protected networks", in <i>Proc. Design of Reliable Communication Networks</i> , Munich, Germany April 2000, pp. 299-303.
_____	C25	Y. Wang, <i>Modelling and solving single and multiple facility restoration problems</i> , Ph.D. dissertation, Sloan School of Management, MIT, June 1998., pp.32-33.
_____	C26	W.D. Grover, "Distributed Restoration of the Transport Network", in <i>Network Management into the 21st Century</i> , editors T. Plevyak, S. Aidarous, IEEE / IEE Press co-publication, Chapter 11, pp. 337-417, Feb. 1994.
_____	C27	W.D. Grover, "Self-organizing Broad-band Transport Networks", <i>Proceedings of the IEEE Special Issue on Communications in the 21st Century</i> , vol. 85, no.10, October 1997, pp. 1582-1611.
_____	C28	Y. Xiong; L.G. Mason, "Restoration strategies and spare capacity requirements in self-healing ATM networks" <i>IEEE/ACM Transactions on Networking</i> , Volume: 7 Issue: 1, Feb. 1999, pp. 98 -110.



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_____	C29	J. L. Kennington, M.W. Lewis, The Path Restoration Version of the Spare Capacity Allocation Problem with Modularity Restrictions: Models, Algorithms, and an Empirical Analysis, <i>Technical Report 98-CSE-13</i> , Department of Computer Science And Engineering, Southern Methodist University, Dallas, December 1998.
_____	C30	Rainer R. Iraschko, "Path Restorable Networks", PhD Thesis, University of Alberta, chapter 4, pp. 56-85, Fall 1996.
_____	C31	M. H. MacGregor, W. D. Grover, "Optimized k -shortest-path Algorithm for Facility Restoration", <i>Software-Practice and Experience</i> , Vol. 24, No. 9, September 1994, pp. 823-834.
_____	C32	I. Saniee, "Optimal Routing Designs in Self-Healing Communications Networks", <i>Bellcore, MRE 2D-362</i> , May 1994, 10 pages.
_____	C33	"Introduction to SONET Networking", NORTEL tutorial handbook, Oct. 30, 1996.
_____	C34	R.R. Iraschko, M.H. Mac Gregor, W.D. Grover, "Optimal Capacity Placement for Path Resoration in Mesh Survivable Networks", IEEE, 1996, pages 1568 – 1574.
_____	C35	G.N. Brown, W.D. Grover, J.B. Slevinsky, M.H. MacGregor, "Mesh/Arc Networking: An Architecture for Efficient Survivable Self-Healing Networks" IEEE Int'l Conference on Communications, May 1-5, 1994, pages 471 – 477.
_____	C36	W.D. Grover, "Network Survivability: A Crucial Issue for the Information Society", IEEE Canadian Review, No. 27, Summer 1997, pages 16 – 21.
_____	C37	W.D. Grover, D. Stamatelakis, "Cycle-Oriented Distributed Preconfiguration: Ring-like Speed with Mesh-like Capacity for Self-planning Network Restoration.", Proceedings of IEEE ICC 1998, 7 pages.



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